

ORIGINAL

LATHAM & WATKINS

ATTORNEYS AT LAW

1001 PENNSYLVANIA AVE., N.W.

SUITE 1300

WASHINGTON, D.C. 20004-2505

TELEPHONE (202) 637-2200

FAX (202) 637-2201

PAUL R. WATKINS (1899-1973)
DANA LATHAM (1898-1974)

CHICAGO OFFICE

SEARS TOWER, SUITE 5800
CHICAGO, ILLINOIS 60606
TELEPHONE (312) 876-7700
FAX (312) 993-9767

LONDON OFFICE

ONE ANGEL COURT
LONDON EC2R 7HJ ENGLAND
TELEPHONE + 44-171-374 4444
FAX + 44-171-374 4460

LOS ANGELES OFFICE

633 WEST FIFTH STREET, SUITE 4000
LOS ANGELES, CALIFORNIA 90071-2007
TELEPHONE (213) 485-1234
FAX (213) 691-8763

MOSCOW OFFICE

113/1 LENINSKY PROSPECT, SUITE C200
MOSCOW, RUSSIA 117198
TELEPHONE + 7-503 956-5555
FAX + 7-503 956-5556

NEW JERSEY OFFICE

ONE NEWARK CENTER
NEWARK, NEW JERSEY 07101-3174
TELEPHONE (201) 639-1234
FAX (201) 639-7298

NEW YORK OFFICE

885 THIRD AVENUE, SUITE 1000
NEW YORK, NEW YORK 10022-4802
TELEPHONE (212) 908-1200
FAX (212) 751-4864

ORANGE COUNTY OFFICE

650 TOWN CENTER DRIVE, SUITE 2000
COSTA MESA, CALIFORNIA 92626-1925
TELEPHONE (714) 540-1235
FAX (714) 755-8290

SAN DIEGO OFFICE

701 "B" STREET, SUITE 2100
SAN DIEGO, CALIFORNIA 92101-8197
TELEPHONE (619) 236-1234
FAX (619) 696-7419

SAN FRANCISCO OFFICE

505 MONTGOMERY STREET, SUITE 1900
SAN FRANCISCO, CALIFORNIA 94111-2562
TELEPHONE (415) 391-0600
FAX (415) 395-8095

December 4, 1998

BY HAND DELIVERY

Ms. Magalie Roman Salas
Office of the Secretary
Federal Communications Commission
1919 M Street, N.W., Suite 222
Washington, D.C. 20554

RECEIVED

DEC - 4 1998

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Re: Vanguard Cellular Systems, Inc. Petition for Limited Waiver of Section 20.18(c)
CC Docket 94-102

Dear Ms. Salas:

Enclosed are an original and four copies of a Petition for Limited Waiver in the above-referenced matter. Please direct any questions regarding this matter to my attention at (202) 637-2211. Thank you.

Sincerely,

Ross M. Guberman

Ross M. Guberman
of LATHAM & WATKINS

Enclosures

cc: Elizabeth Lyle
Dale Hatfield

No. of Copies rec'd CH
List ABCDE

ORIGINAL
RECEIVED

DEC - 4 1998

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
VANGUARD CELLULAR SYSTEMS,)
INC.)
)
Petition for Limited Waiver of Section)
20.18(c) of the Commission's Rules)

PETITION FOR LIMITED WAIVER

Richard Rowlenon
VANGUARD CELLULAR SYSTEMS, INC.
2002 Pisgah Church Road
Greensboro, NC 27455
336-545-2223

Karen Brinkmann
Ross Guberman
LATHAM & WATKINS
1001 Pennsylvania Avenue, N.W., Suite 1300
Washington, D.C. 20004
202-637-2200
(Its Attorneys)

December 4, 1998

TABLE OF CONTENTS

I.	SUMMARY	2
II.	HISTORY OF SECTION 20.18(C)	3
III.	BASIS FOR WAIVER PETITION	5
IV.	GROUND FOR LIMITED WAIVER	6
A.	Vanguard Is In Substantial Compliance With the Requirements of Section 20.18(c)	6
B.	Vanguard Will Implement Digitally Compatible Technology When Such Technology Becomes Available	8
1.	The Commission Has Acknowledged the Technological Impediments to TTY Compatibility with Digital Systems	8
2.	Research and Testing Have Produced Promising Digital Solutions, But These Solutions Require Further Development	9
3.	Implementation of the Commission’s Digital Service Goals Has Not Been “Readily Achievable”	12
C.	Vanguard Meets the Commission’s Waiver Standard	13
V.	VANGUARD’S PROPOSED COMPLIANCE PLAN	13
A.	Interim Plan	14
B.	Notification Plan	14
C.	Reporting Plan	15
D.	Long-Term Implementation Plan	15
VI.	CONCLUSION	16

ATTACHMENTS

LIST OF ATTACHMENTS

1. NORTEL Letter
2. NEC Letter
3. Motorola Statement
4. Mallory Declaration
5. Baldwin Declaration
6. Rowlenson Declaration
7. Vanguard's December 4, 1998, TTY Notification Plan
8. Vanguard's Timetable for Implementing Section 20.18(c)
9. October Quarterly Status Report
10. Wireless TTY Forum Workplan

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
VANGUARD CELLULAR SYSTEMS,)	
INC.)	
)	
Petition for Limited Waiver of Section)	CC Docket No. 94-102
20.18(c) of the Commission's Rules)	

PETITION FOR LIMITED WAIVER

Pursuant to Section 1.3 of the Commission's Rules and to the Commission's *Further Extension Order* in CC Docket No. 94-102,¹ Vanguard Cellular Systems, Inc. ("Vanguard"),² by its attorneys, hereby submits this Petition for Limited Waiver of Section 20.18(c) of the Commission's Rules that requires wireless carriers to be capable of transmitting 9-1-1 calls from speech or hearing impaired individuals through TTY devices or other Text Telephone Devices.³

¹ *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, Order, DA 98-2323 (rel. Nov. 13, 1998) ("*Further Extension Order*").

² Vanguard is filing this waiver petition on behalf of its subsidiaries, which include Pennsylvania Cellular Telephone Corp.; Binghamton CellTelCo; Vanguard Binghamton Inc.; Orange County Cellular Telephone Corp.; West Virginia Cellular Telephone Corp.; Atlantic Cellular Telephone of Delaware, L.L.C.; and Piscataqua Cellular Telephone of Delaware, L.L.C.

³ 47 C.F.R. § 20.18(c).

I. SUMMARY

Vanguard is in substantial compliance with Section 20.18(c). The majority of Vanguard's wireless customers are equipped with an analog telephone, and the remainder have a dual mode (analog/digital) telephone. Vanguard has undertaken a comprehensive notification program to ensure that customers using dual-mode phones are aware of the potential for error when TTY devices are used with digital wireless telephones. Vanguard is offering to replace such customers' handsets free of charge until a digital solution is found. Vanguard therefore believes it is capable of transmitting 9-1-1 calls from TTY users, as required by the Rule. At the very least, Vanguard will be in full compliance with Section 20.18(c) in the near future, possibly before the current suspension expires on December 31, 1998.

Although Vanguard is in substantial compliance with Section 20.18(c) today, Vanguard shares the Commission's goal of ensuring that TTY users -- like all Vanguard customers -- can enjoy the benefits of digital wireless technology as soon as possible. Vanguard has developed a timetable for implementing a digital solution for wireless/ TTY compatibility as soon as such a solution becomes available. Vanguard will continue to work with wireless equipment and TTY manufacturers to overcome the current impediments to implementing suitable digital solutions. As the Commission has effectively acknowledged, however, such impediments are not insubstantial, and a solution does not appear "readily achievable" at this time.

Because Vanguard is committed to achieving full compliance with the letter and spirit of Section 20.18(c), and because it would not be in the public interest to penalize Vanguard for failing to implement digital technology that currently is not available, granting a limited

waiver of Section 20.18(c) would allow Vanguard to focus its energies on achieving the Commission's TTY/ 9-1-1 digital service goals as expeditiously as possible.

II. HISTORY OF SECTION 20.18(C)

The Commission began its rulemaking to ensure compatibility between TTY devices and wireless 9-1-1 service on October 19, 1994.⁴ Section 20.18(c) was adopted on June 12, 1996,⁵ pursuant to Title VII of the Americans with Disabilities Act, which requires nondiscriminatory access to state and local governmental services (*e.g.*, 9-1-1),⁶ and Section 255 of the Communications Act, which requires manufacturers of telecommunications equipment or providers of telecommunications services to ensure that the equipment or services are accessible and usable by individuals with disabilities, if readily achievable.⁷

As adopted, the Rule required that, by October 1, 1997, wireless carriers "must be capable of transmitting 911 calls from individuals with speech or hearing disabilities through means other than mobile radio handsets, *e.g.*, through the use of Text Telephone Devices."⁸ Because implementation of Section 20.18(c) proved difficult for the wireless industry, several

⁴ *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, Notice of Proposed Rulemaking, 9 FCC Rcd 6170 (1994) ("NPRM").

⁵ *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 18676 (1996) ("*First Report and Order*").

⁶ 42 U.S.C. §§ 12131-34.

⁷ Telecommunications Act of 1996, Pub. L. 104-104, 110 Stat. 56 (1996), Section 101, adding Section 255 to the Communications Act, 47 U.S.C. § 255.

⁸ 47 C.F.R. § 20.18(c). Although the original implementation date was set at October 1, 1996, the Commission recognized the technical challenges associated with TTY/ wireless compatibility in the *First Report and Order* and therefore delayed the implementation date of the TTY/ 9-1-1 compatibility requirements to October 1, 1997. See Letter from William E. Kennard to Stephen Leeolou ("*Letter to Vanguard*"), October 23, 1998.

carriers filed petitions for reconsideration of the *First Report and Order*. The Commission responded by issuing a *Reconsideration Order* that suspended enforcement of Section 20.18(c) for one year (*i.e.*, until October 1, 1998).⁹ The Commission also delegated to the Wireless Telecommunications Bureau the authority to extend the October 1, 1998, deadline up to three additional months (*i.e.*, through January 1, 1999).

Pursuant to this authority, and in response to a formal request by two trade associations,¹⁰ the Wireless Bureau, on September 30, 1998, extended the deadline for Section 20.18 compliance for six additional weeks (*i.e.*, to November 15, 1998).¹¹ This extension was followed by a letter from Chairman William E. Kennard to thirty wireless carriers (including Vanguard) that urged the carriers to overcome technical hurdles to achieving Section 20.18(c) compliance for digital systems "within the shortest feasible time."¹²

Most recently, the Bureau issued an Order on November 13, 1998, that extended the suspension of enforcement of Section 20.18(c) through December 31, 1998 (*i.e.*, the maximum extension under the Commission's grant of authority).¹³ The Bureau indicated that

⁹ *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, Memorandum Opinion and Order, 12 FCC Rcd 22665 (1997) ("*Reconsideration Order*").

¹⁰ See Letter from A. Williams, Assistant General Counsel, Cellular Telecommunications Industry Association ("CTIA") and M. Madigan Jones, Vice President of External Affairs, Personal Communications Industry Association ("PCIA"), to Daniel Phythyon, Chief, Wireless Telecommunications Bureau, September 11, 1998.

¹¹ *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, Order, DA 98-1982 (rel. Sept. 30, 1998) ("*Extension Order*").

¹² See Letter to Vanguard.

¹³ See *Further Extension Order* at ¶ 3.

any further suspension would be contingent on the Commission's waiving the Rule for a particular carrier.

III. BASIS FOR WAIVER PETITION

As a general matter, the Commission may waive the application of any of its rules at any time upon a showing of good cause.¹⁴ The Commission may exercise its discretion to waive a rule where particular facts would make strict compliance inconsistent with the public interest.¹⁵ *WAIT Radio*, the leading case construing the Commission's general waiver power, emphasizes that although a waiver applicant faces a "high hurdle," waivers sometimes are appropriate because an administrative agency's "discretion to proceed in difficult areas through general rules is intimately linked to the existence of a safety valve procedure for consideration of an application for exemption based on special circumstances."¹⁶ Vanguard asks the Commission to find that Vanguard's particular circumstances with respect to the TTY/ 9-1-1 proceeding justify the invocation of the Commission's general waiver provision.

The Wireless Telecommunications Bureau also has expressly invited wireless carriers to submit Petitions for Waiver of Section 20.18(c).¹⁷ To ensure that Petitioners demonstrate their "commitment to, and plans for, complying with" the Rule, the Bureau requires that Petitions for Waiver specify with particularity the following:

¹⁴ 47 C.F.R. § 1.3; *see also WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969), *cert. denied*, 409 U.S. 1027 (1972).

¹⁵ *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1168 (D.C. Cir. 1990) (*citing WAIT Radio*, 418 F.2d at 1159).

¹⁶ *Id.*

¹⁷ *Further Extension Order* at ¶¶ 10-11.

- (1) What steps the carrier is taking or intends to take to provide users of TTY devices with the capability to operate such device in conjunction with digital wireless phones.
- (2) When the carrier intends to make this capability available to TTY users. This information should include well-documented timetables and milestones from the carrier regarding the implementation of this capability.
- (3) What reasonable steps the carrier will take to address the consumer concerns referenced in the [*Extension Order*].¹⁸

Vanguard addresses these three concerns in Sections IV and V, below.

IV. GROUNDS FOR LIMITED WAIVER

Vanguard is presently in substantial compliance with Section 20.18(c) and believes it will be in full compliance in the very near future. Vanguard also is taking active steps to implement the Commission's digital service goals. To the extent a waiver is required, however, the Commission should grant Vanguard a limited waiver of the Rule because no digital technology is currently capable of transmitting 9-1-1 calls made from TTY devices at an acceptable level of accuracy.

A. Vanguard Is In Substantial Compliance With the Requirements of Section 20.18(c)

The Commission's digital wireless/ 9-1-1 compatibility rulemaking appears to target two separate objectives. The first objective, grounded in the language of the Rule, is to ensure that TTY users can access 9-1-1 reliably and with minimal error. As the Commission put it, "TTY access to 911 services is important to the public safety of the 30 million Americans with

¹⁸ *Id.* at ¶ 11. The *Extension Order* included a letter from consumer representatives to CTIA that outlines thirteen consumer criteria that address the "functional characteristics" of an ideal situation. See *Extension Order*, Appendix A.

hearing and speech disabilities.”¹⁹ Vanguard has met this objective by ensuring that customers using TTY can call 9-1-1 with Vanguard’s currently available analog technology.²⁰ Although Vanguard is in the process of converting its twenty-six cellular markets to digital technology,²¹ roughly 84% of Vanguard’s customers still have analog handsets.²² Those customers that do have dual-mode handsets will be notified that they may obtain an analog-only model free of charge.²³

The Commission also has indicated a second objective, one that is not expressed in the language of the Rule. The Commission has recognized the benefits of digital technology and is eager to provide TTY users with the full range of digital choices and features.²⁴ Although Vanguard supports this objective, Vanguard respectfully notes that as desirable as digital services may be, digital service is not required to serve the purpose of the Rule, which is to promote the safety of consumers who use TTY devices to call 9-1-1.²⁵ Moreover, the Rule itself contains no

¹⁹ *First Order and Report* at ¶ 51; see also *Reconsideration Order* at ¶ 53 (“[P]eople with hearing and speech disabilities who rely on TTYs to communicate are entitled to the same rapid and efficient access to help in emergencies as other Americans.”).

²⁰ See Letter from Robert Brewer, Account Manager, Northern Telecom to Richard Rowleson, December 1, 1998 (“*NORTEL Letter*”) (Attachment 1) (“With regard to analog calls the Nortel equipment supplied to Vanguard is capable of transmitting 911 calls from people with speech or hearing disabilities through means other than the mobile handset, as an example through use of Text Telephone Devices (TTY).”).

²¹ See *Mallory Declaration* (Attachment 4) at ¶ 3.

²² *Id.* at ¶ 4.

²³ See *Vanguard’s December 4, 1998, TTY Notification Plan* (“*Notification Plan*”) (Attachment 7).

²⁴ See, e.g., *Reconsideration Order* at ¶ 53.

²⁵ See *Further Extension Order* at ¶ 4. (“We take this action because persons with disabilities who rely on TTY devices *must* be able to use 911 in emergencies, when lives may depend on effective communication with public safety personnel.”).

requirement that carriers use digital technology to transmit 9-1-1 signals from TTY devices.

Thus, Vanguard's provision of analog service to customers using TTY devices is sufficient to constitute substantial compliance with Section 20.18(c).

B. Vanguard Will Implement Digitally Compatible Technology When Such Technology Becomes Available

Vanguard is committed to completing the transition to digital wireless technology.²⁶ Vanguard has no desire or incentive to leave any customer behind as this new technology becomes available. Concrete and unyielding technical problems, however, have delayed Vanguard's efforts to achieve digital compatibility. Far from being solely the result of "competing demands,"²⁷ this delay has resulted from engineering and technological obstacles over which Vanguard has had no control.

1. The Commission Has Acknowledged the Technological Impediments to TTY Compatibility with Digital Systems

The Commission has long recognized the difficulty of making TTY devices compatible with digital interfaces. As recently as 1997, the Commission noted that:

The [TTY/ 9-1-1] record [...] clearly indicates that it is currently not possible to provide digital wireless services to TTY users. Consumer organizations representing individuals who are deaf and individuals with hearing and speech disabilities [...] acknowledge that additional time is required to implement wireless digital solutions for TTY users. [...] [T]he Commission must also recognize the present existence of technical barriers.²⁸

The Commission's two 1998 extension orders also acknowledge the obstacles that the wireless industry must overcome before it can implement a technically suitable digital solution that will

²⁶ See *Mallory Declaration* (Attachment 4) at ¶ 3.

²⁷ *Reconsideration Order* at ¶ 53.

²⁸ *Id.* at ¶ 55.

satisfy parties with divergent interests.²⁹ Thus, to date, the Commission has not found that the solution for digital wireless TTY compatibility is to be “readily achievable,” nor has the Commission found the solution to be within the control of the carriers. Rather, carriers such as Vanguard depend on the availability of solutions from manufacturers of wireless equipment and TTY devices.³⁰

2. Research and Testing Have Produced Promising Digital Solutions, But These Solutions Require Further Development

Vanguard is a member of the Wireless TTY Forum, a diverse group of approximately 70 wireless carriers and equipment manufacturers, TTY equipment manufacturers, emergency service providers, and hearing-impaired consumer organizations. The Forum has met regularly since September 1997 to develop solutions that will enable TTY users to make 9-1-1 calls on digital networks.

The Forum exists primarily to coordinate divergent interests, to perform testing, and to share research and ideas.³¹ Although the Forum has no direct implementation authority,

²⁹ See *Extension Order* at ¶ 8 (noting “the complexity of the technical obstacles facing the Forum, as well as the difficulty of developing solutions that are acceptable to multiple carrier, manufacturing, government, and consumer groups”); *Further Extension Order* at 5 (noting “the problems associated with successfully transmitting TTY calls over [digital wireless] systems”).

³⁰ See Letter from Jose Sosa, Director of Wireless Marketing Division, NEC America Inc. to Mike Mallory, November 24, 1998 (“*NEC Letter*”) (Attachment 2) (“[N]o practical solution exists yet for reducing TTY transmission digital signal error rates to those of analog signals.”); *NORTEL Letter* (Attachment 1) (“With regard to digital calls through the Nortel equipment supplied to Vanguard the equipment, in the short term, may not be capable of transmitting the 911 call with sufficient error free text to elicit proper 911 response.”); Motorola Statement Concerning TTY/9-1-1 Compliance (“*Motorola Statement*”) (Attachment 3) (“To date, no manufacturer can assure TTY users of the accuracy they are requesting (less than 1% error rate) [...]”).

³¹ See *Further Extension Order* at ¶¶ 5-6.

Vanguard has found the Forum's findings very useful in planning its compliance strategy. Specifically, Forum research and reports have helped Vanguard to understand why digital systems do not meet the same performance standards as analog systems.³²

The Forum has considered several solutions that may work with Vanguard's TDMA/ GSM digital technology. All these solutions face the fundamental problem inherent in coupling TTY technology with digital systems. TDMA wireless systems may be incompatible with TTY devices for several reasons, including Vocoder distortion, digital technologies, received signal level, multi-path fading effects, receiver attack time, hand offs, adjacent and co-channel interference, network effects, and TTY performance.³³ Research into GSM technology also shows that TTY calls made through a digital cellular telephone result in errors rooted primarily in the operation of the digital Vocoder.³⁴

In addition to ascertaining the general obstacles to TDMA/ GSM compatibility with TTY devices, Vanguard has considered the particular problems endemic to voice-based and data-based solutions. As a whole, voice-based digital solutions have generally proved ineffective. Voice solutions, which pass the Baudot signal of a TTY device through the Vocoder of a digital interface, achieve an unacceptable character error rate (*i.e.*, more than the 1 percent error rate common to analog cellular systems).³⁵

³² See, e.g., *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, Wireless TTY Forum: Seeking Solution to TTY through Wireless Digital Systems, Quarterly Status Report (filed Oct. 13, 1998) ("*October Quarterly Status Report*") (Attachment 9).

³³ See *Wireless TTY Forum Workplan: TTY Access over Digital Wireless Systems* ("*Workplan*") (Attachment 10) at 8.

³⁴ *Id.*

³⁵ See *October Quarterly Status Report* (Attachment 9).

Although data solutions are more promising and have been the target of much research and testing by the Forum, Vanguard cannot presently implement such a solution. Vanguard has contacted all of the manufacturers whose digital phones it sells (Nokia, Motorola, and NEC) as well as its switch manufacturer (NORTEL)³⁶ to determine the current status and projected availability of various digital solutions. None of these manufacturers has thus far designed an acceptable solution,³⁷ and it is impossible to predict with certainty when any given technology will be available. It appears, however, that the first available data-based solution will likely be one that installs Inter-Working Function (IWF) software into Vanguard's network infrastructure.³⁸

Much progress has been made toward an IWF solution, but operable technology simply is not yet available. TDMA/ GSM standards currently support the IWF functionality, but full IWF implementation cannot occur until the product is fully developed and deployed (including billing capabilities for data), the TTY software is installed in the subscriber terminal, and the IWF infrastructure is installed either per switch or shared among the carrier's switches. In addition, the IWF solution requires a V.18 capable modem, which is available in Europe but not yet in the United States. The Forum is asking United States manufacturers to incorporate the V.18 standard in their modems, which requires time and continued support from the Commission.³⁹

³⁶ See NORTEL Letter; NEC Letter; Motorola Statement (Attachments 1-3).

³⁷ See *supra* note 30.

³⁸ Personal communication with Nokia; see also Motorola Statement (Attachment 3).

³⁹ See October Quarterly Status Report (Attachment 9).

In sum, although continued development of an IWF or other data-based solution appears likely, Vanguard can commit to implementing such technology only when it becomes commercially available.⁴⁰ As set forth in Section V, below, Vanguard has developed an aggressive schedule for deploying a digital solution when it does become available, a commitment that further supports Vanguard's request for a limited waiver.

3. Implementation of the Commission's Digital Service Goals Has Not Been "Readily Achievable"

When the above facts are viewed in the light of the Commission's original authority for issuing the TTY/ wireless compatibility Rule, Title II of the Americans with Disabilities Act and Section 255 of the Communications Act, it becomes clear that the sort of technology that Vanguard seeks to provide has not been "readily achievable."⁴¹ As defined by the Americans with Disabilities Act, "readily achievable" means "easily accomplishable and able to be carried out without much difficulty or expense."⁴² In its proposed rules to implement Section 255, the Commission has stated that technological "feasibility" should be part of the definition of "readily achievable."⁴³ The work of the Forum⁴⁴ and the attached statements from wireless manufacturers⁴⁵ show that the TTY/ digital wireless compatibility goals are neither

⁴⁰ *Mallory Declaration* (Attachment 4) at ¶ 6.

⁴¹ 47 U.S.C. § 255(c).

⁴² 42 U.S.C. § 12181(9).

⁴³ *In the Matter of Implementation of Section 255 of the Telecommunications Act of 1996*, Notice of Proposed Rulemaking, WT Docket No. 96-198, at ¶ 101 (rel. April 20, 1998) (noting that feasibility analysis must consider that, "[a]vailable technology may not be able to easily develop solutions for some accessibility problems.").

⁴⁴ *See October Quarterly Status Report* (Attachment 9).

⁴⁵ *See NORTEL Letter; NEC Letter; Motorola Statement* (Attachments 1-3).

easily accomplishable nor able to be carried out without great technical and organizational difficulties. Indeed, no commercially available solution currently exists.⁴⁶

C. Vanguard Meets the Commission's Waiver Standard

For the reasons described above, strict enforcement of Section 20.18(c) would not serve the public interest. If the Commission did not grant the requested waiver, numerous pending applications could be affected.⁴⁷ Vanguard has demonstrated that such a risk, particularly when combined with the genuine technological obstacles described above, is a circumstance that merits the "safety valve" of a limited waiver of the rules.⁴⁸

Vanguard believes it has complied with the letter of Section 20.18(c), and Vanguard continues to demonstrate its commitment to transitioning all of its customers to digital technology, including those who rely on TTY devices until a data-based digital solution that meets the Commission's digital service goals along with its public safety goals becomes available. Until a data-based solution that meets the Commission's digital service goals along with its public safety goals becomes available, however, Vanguard requires a limited waiver from the Commission.

V. VANGUARD'S PROPOSED COMPLIANCE PLAN

To further support its Petition for Limited Waiver, Vanguard offers the Commission the following interim, notification, reporting, and long-term implementation plans.

⁴⁶ *Id.*

⁴⁷ *See, e.g.,* Vanguard Cellular Systems, Inc. and Winston, Inc. Seek Consent for Transfer of Control, Public Notice DA 98-2320 (rel. Nov. 13, 1998).

⁴⁸ *See* 47 C.F.R. § 1.3; 47 C.F.R. § 22.119(a)(2) (providing for waiver of public mobile services rules when "in view of unique or unusual factual circumstances [...] application of the rule(s) would be [...] contrary to the public interest [...]").

A. Interim Plan

Vanguard, unlike many other wireless carriers, offers analog service in all twenty-six of its markets and will provide customer service and support for customers who use TTY devices with analog wireless services. In addition, all Vanguard telephones are equipped with either analog or dual mode technology.

Vanguard is unaware of any customer complaints about its dual-mode phones and has notified all customers that errors may occur if they use a TTY device with a dual-mode phone (as described in its *TTY Notification Plan* below). To prevent any customers from experiencing 9-1-1 errors, however, Vanguard is attempting to ensure that all TTY customers have analog-only telephones at no additional cost by December 31, 1998.⁴⁹ If additional time is needed, Vanguard will notify the Commission as to the reasons for the delay and the amount of additional time required.

B. Notification Plan

Pursuant to the notification requirement outlined in the *Reconsideration Order*,⁵⁰ Vanguard has already made every reasonable effort to notify current and potential subscribers that they may experience errors in using TTYs to call 9-1-1 with digital wireless handsets. In addition, Vanguard will immediately implement the attached "TTY Notification Plan," which includes a revised text to be inserted in all billing statements, a posting on the company's Website and regular updates to customers, a brochure that will be made available at all retail

⁴⁹ See *Mallory Declaration* (Attachment 4) at ¶ 5.

⁵⁰ *Reconsideration Order* at ¶¶ 60-61.

outlets, a TTY notification sticker to be placed on all digital handsets prior to sale, and a letter to all Vanguard employees about the TTY/ wireless compatibility issue.⁵¹

C. Reporting Plan

Vanguard will meet or exceed the reporting requirements outlined in the *Further Extension Order*.⁵² Specifically, Vanguard will keep the Commission apprised quarterly -- and more frequently in the event of any significant changes or developments -- as to the status of Vanguard's long-term implementation efforts (described below) and as to the nature and number of customer complaints regarding TTY compatibility.⁵³

D. Long-Term Implementation Plan

Vanguard is committed to implementing any reasonable and compatible technology that the Forum produces or recommends.⁵⁴ Vanguard is actively pursuing its contacts with its equipment manufacturers (NORTEL, Nokia, Motorola, and NEC) and urging them to develop the requisite service as expeditiously as possible.⁵⁵

In addition, as part of its obligations pursuant to the *Further Extension Order*, Vanguard will determine the degree to which any proposed technology conforms with the thirteen technical consumer concerns referenced in the *Extension Order*.⁵⁶ Vanguard will

⁵¹ See *Notification Plan* (Attachment 7); *Baldwin Declaration* (Attachment 5) at ¶¶ 1-2.

⁵² See *Further Extension Order* at ¶ 11.

⁵³ See *Vanguard's Timetable for Implementing Section 20.18(c)* ("Timetable") (Attachment 8); *Rowlenson Declaration* (Attachment 6) at ¶¶ 1-2.

⁵⁴ *Mallory Declaration* (Attachment 4) at ¶ 9.

⁵⁵ *Id.* at ¶ 8.

⁵⁶ The Forum already has begun to evaluate each proposal against these thirteen consumer suggestions. *Workplan*, Appendix C (Attachment 10).

particularly focus on the promising IWF data-based solution currently being developed by Nokia and by other manufacturers.⁵⁷

As soon as acceptable technology becomes commercially available, Vanguard is committed to full and vigorous implementation.⁵⁸ In response to the *Further Extension Order*, Vanguard has developed a detailed timetable and workplan for implementing a wireless solution for TTY/ 9-1-1 transmissions.⁵⁹ Vanguard believes, based on the limited information available today about such a solution, that it can deploy an appropriate solution within four months of the date the manufacturers make it available.⁶⁰

VI. CONCLUSION

Vanguard's commitment to developing and implementing workable technology, when combined with its broad notification and reporting plans discussed above, demonstrates to the Commission that Vanguard is taking all reasonable steps to achieve full and complete compliance with Section 20.18(c) for both analog and digital technologies.

⁵⁷ As the *Workplan* indicates, the proposed IWF solution already conforms with many of the applicable consumer concerns. *Id.* at 16.

⁵⁸ Vanguard emphasizes that all of the plans outlined above are subject to change if its pending merger with AT & T is approved and consummated. *See supra* note 47.


⁵⁹ *See Timetable* (Attachment 8); *Rowlenson Declaration* (Attachment 6) at ¶¶ 1-2.

⁶⁰ *Id.*

For the reasons stated above, Vanguard Cellular Systems, Inc. urges the Commission to grant its Petition for Limited Waiver of Section 20.18(c) of the Commission's Rules to the extent necessary to allow Vanguard to provide analog telephones to all of its TTY users and to continue working toward a viable data solution to the TTY/ digital wireless compatibility problem.

Respectfully submitted,

Richard Rowlen
VANGUARD CELLULAR SYSTEMS, INC.
2002 Pisgah Church Road
Greensboro, NC 27455
336-545-2223


Karen Brinkmann
Ross Guberman*
LATHAM & WATKINS
1001 Pennsylvania Avenue, N.W., Suite 1300
Washington, D.C. 20004
202-637-2200
(Its Attorneys)

December 4, 1998

*Admitted in Virginia Only

NORTEL NETWORKS™

Robert Brewer
Northern Telecom
Account Manager
2221 Lakeside Blvd.
Wireless Networks
Richardson, TX 75082-4399

Tel 972-684-7885
Fax 972-684-3787
E-mail rbrewer@nortel.com

December 1, 1998

Rich Rowlensen
Exec. VP & General Counsel
Vanguard Cellular Systems Inc.
2002 Pisgah Church Rd.
Greensboro, NC 27455

Dear Rich:

This letter is in response to your request for Nortel to provide support information for Vanguard to file a waiver request with the FCC regarding the E911/TTY rules. This response is based on the best technical information we have available and upon what may be required by the FCC rule.

With regard to analog calls the Nortel equipment supplied to Vanguard is capable of transmitting 911 calls from people with speech or hearing disabilities through means other than the mobile handset, as an example through use of Text Telephone Devices (TTY). However if the 911 call content is corrupted by the speech or hearing disabled users consumer equipment, Nortel's system equipment will not be able to correct the errors. Nortel is aware that the vast majority of TTYs' are not designed to connect to wireless handsets, and such lack of good connection frequently corrupts messages before they reach the system networks.

With regard to digital calls through the Nortel equipment supplied to Vanguard the equipment, in the short term, may not be capable of transmitting the 911 call with sufficient error free text to elicit proper 911 response. Nortel believes the best long-term solution for both analog and digital calls from people with speech or hearing disabilities is to use a reliable digital data path. Industry standards to support TTY operation in digital mode are not currently defined. Nortel is working with other industry vendors and carriers to define the required standards to implement this service. Nortel is an active Member in the TTY and WEIAD forums, which are specific to these issues. History tells us that it typically takes twelve to eighteen months from the adoption of standards to the commercial availability of product. However, in this instance, the various Text Telephone Devices (TTY) vendors or other terminal type vendors will need to develop or modify devices to be tested on Network Infrastructure vendors such as Nortel. Nortel consequently cannot speak to their design timeframes.

Sincerely,



Robert Brewer
Account Manager

CC: Vanguard Cellular Inc - Blair Kutrow, Mike Mallory.
Nortel Networks- Mark Whitfill, Sarah Saunders, Charles Spann

NEC

NEC America, Inc.

1821 W Walnut Hill Lane

Irving, Texas 75038-7999

Tel 214-751-7452

Fax 214-751-7482

November 24, 1998

Mr. Mike Mallory
Product Manager
Vanguard Cellular Systems, Inc.
2002 Pisgah Church Rd.
Greensboro, NC 27455

Dear Mr. Mallory

Per your request, I am responding on behalf of NEC to summarize our position regarding wireless handset compatibility with Text Telephone Devices (TTY).

NEC is strongly committed to supporting the communications requirements of the hearing impaired community. In fact, the heart of NEC's corporate philosophy is enabling technology to improve the quality of human life. To that end, we have been diligently working with both the FCC and the Wireless TTY Forum as an active participant to solve the digital/TTY compatibility issue.

As you may know, no practical solution exists yet for reducing TTY transmission digital signal error rates to those of analog signals. However, NEC does offer a TTY/digital interface solution today and we continue to develop alternatives that allow improved digital transmission over our digital wireless handsets.

Our existing solution is an Axcell accessory that connects to the bottom of our handset and provides an RJ11 connection compatible with TTY devices. This accessory is currently available for the DigitalTalk 2000 and DigitalTalk MAX 2100, and is sold by Sendele Wireless Solutions.

In addition, we are working with TTY device manufacturers to develop new TTY technology that significantly improves the error rate when using TTY devices with digital wireless phones. These TTY prototypes exist today. NEC has also developed a prototype handsfree accessory similar to the Axcell solution, that replaces the RJ11 connection with a 2.5mm jack and plug, is HATIS compatible, and may be used with TTY devices. This last solution requires a compatible cable retrofit for the TTY device, but currently is the preferred CTIA solution. We are continuing our efforts to develop this product in conjunction with the TTY Forum.

NEC will continue its work in this important area and will closely share results with our carrier partners like Vanguard. If you require additional information or wish to establish direct contact with our responsible engineering group, please feel free to contact me directly on (972)751-7410.

Regards,

A handwritten signature in black ink, appearing to read "Jose Sosa", written over the printed name.

Jose Sosa
Director
Wireless Marketing Division

Cc: Mickey Pacini



MOTOROLA

Cellular Subscriber Sector

December 2, 1998

Motorola has been an active participant in the TTY Forum since its inception. We have actively pursued analysis of the technological issues related to the transmission of baudot signals over a digital network. We have a close relationship with both Ultratech and Lober & Walsh (TTY manufacturers) and are working with both. As a member of the industry, we support the CTIA position that the most realistic and effective solution for TTY users will be the digital solution offered by a standard protocol such as V.18. To date, no manufacturer can assure TTY users of the accuracy they are requesting (less than 1% error rate) unless the digital solution is adopted.

Please feel free to call if you have any questions 202-371-6898.


Regards,

Charles L. Eger
Director of Regulatory Affairs
Personal Communications Sector

DECLARATION OF MICHAEL MALLORY

I, Michael Mallory, hereby declare as follows:

1. I am the Product Manager at Vanguard Cellular Systems, Inc. ("Vanguard"). I have personal knowledge of Vanguard's product line.
2. Vanguard provides analog service in all twenty-six of its cellular markets.
3. Vanguard is committed to converting all twenty-six of its markets to digital technology.
4. Although Vanguard is committed to a digital transition, approximately 84% of Vanguard's customers currently possess analog handsets.
5. Vanguard will provide analog telephones free of charge to any customer who uses TTY or other Text Telephone Devices. Vanguard is attempting to complete this process by December 31, 1998.
6. Vanguard cannot equip its customers with digital telephones that are capable of transmitting a 9-1-1 call from TTY devices until manufacturers develop the appropriate technology.
7. Vanguard is contacting its equipment manufacturers and tracking their progress toward a suitable digital solution.
8. Vanguard is participating in the TTY Wireless Forum and keeping abreast of technological and other developments studied by the Forum.
9. Vanguard is committed to implementing any reasonable and compatible digital wireless technology that the TTY Wireless Forum produces or recommends.
10. I have reviewed the foregoing statements and the facts set forth therein. The information set forth in this Declaration is true and accurate to the best of my knowledge, information, and belief.



Michael Mallory
Product Manager, Vanguard Cellular Systems, Inc.

December 3, 1998

DECLARATION OF ELLEN K. BALDWIN

I, Ellen K. Baldwin, hereby declare as follows:

1. I am the Marketing Services Manager of Vanguard Cellular Systems, Inc. I have personal knowledge of Vanguard's TTY notification procedures.

2. I have reviewed the attached *Notification Plan* and the facts set forth therein. The information set forth in the *Notification Plan* is true and accurate to the best of my knowledge, information, and belief.

A handwritten signature in black ink, appearing to read "Ellen K. Baldwin", written over a horizontal line.

Ellen K. Baldwin
Marketing Services Manager,
Vanguard Cellular Systems, Inc.

VANGUARD'S DECEMBER 4, 1998, TTY NOTIFICATION PLAN

1. Current Billing Insert

In October and November, 1998, Vanguard included the following notice in all billing statements:

TTY devices (also known as TDDs or Text Telephones) allow people who have speech, language, or hearing disabilities to communicate by telephone. TTY devices use a keyboard to enable individuals to type their part of a conversation, which is then transmitted as tones through the telecommunications network. The tones are then transmitted back to text which appears on the recipient's TTY screen. Two types of wireless phones are available -- analog and digital. Some digital wireless phones may operate in the analog mode. Currently, it is possible to place TTY calls using some analog wireless phones. However, TTYs cannot use a digital wireless phone in the digital mode to transmit calls, including calls to 911 emergency services. The Federal Communications Commission requires us to inform you of this existing limitation. Please be assured that we are working with the wireless industry, equipment manufacturers, and representatives of the hearing and speech impaired community to improve the compatibility of digital phones with TTYs.

2. Revised Billing Insert

Effective December 7, 1998, Vanguard is including the following notice with all billing statements:

ATTENTION TTY USERS

TTY devices are not currently compatible with digital wireless phones. If you are a TTY user and are unsure whether your phone is TTY compatible, please contact customer service at 1-800-661-0611 or dial "611" from your CellularOne phone. If you have a digital or dual mode phone, we will replace it with an analog phone at no charge to you. We will also assist you in finding other equipment that will allow you to use your TTY device in conjunction with your new analog phone.

3. Website Posting

Effective December 7, 1998, Vanguard is placing the following notice on its website:

ATTENTION TTY USERS

A TTY (also known as a TDD or Text Telephone) is a telecommunications device that allows people who have speech, language, or hearing disabilities to communicate by telephone. TTY devices include a keyboard that enables people to type their part of a conversation, which is then transmitted in the form of tones through the telecommunications network. The tones are then translated back to text, which appears on the recipient's TTY screen.

TTY devices are currently incompatible with digital wireless telephones. CellularOne is working with the wireless industry, with equipment manufacturers, and with representatives of the hearing and speech impaired community to ensure that digital phones will be compatible with TTY devices. CellularOne will keep its customers fully apprised of the status of these developments.

Certain TTY devices may currently be used with certain analog phones to place wireless calls. If you are a TTY user and are unsure of whether your telephone is TTY compatible, please contact customer service at 1-800-661-0611 or dial "611" from your CellularOne phone. If you currently have a digital or dual mode phone, we will replace it with an analog phone at no charge to you. We can also assist you in finding other equipment necessary to enable you to use your TTY device with your new analog phone.

Customers interested in learning more about TTY devices and their compatibility with analog and digital wireless phones should contact customer service at 1-800-661-0611 or dial "611" from their CellularOne phone.

4. Brochures

The Cellular Telephone Industry Association (CTIA) has developed a model brochure discussing access to wireless telephones for the speech and hearing impaired (attached below). Vanguard will customize the brochure to include the CellularOne logo and add a brief statement that digital phones currently are not compatible with TTYs. Vanguard will begin distributing the brochure at all its retail locations. In the interim, the text of the Revised Billing Insert (see above) will be distributed in all retail locations.

5. Stickers on Digital Handset Packaging

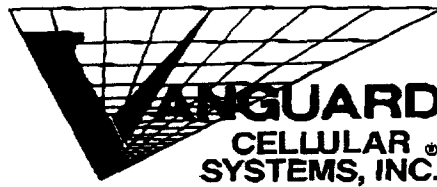
By December 31, 1998, Vanguard will include on all new digital handset packaging a sticker with the following text:

THIS IS A DUAL MODE WIRELESS PHONE.

IT IS NOT COMPATIBLE WITH TTY DEVICES.

6. Letter to All Vanguard Employees

On December 7, 1998, Vanguard will send a letter to all its employees informing them about the TTY/ digital wireless compatibility problem and instructing them on how best to respond to customer queries. The letter is attached below.



(336) 282-3690
FAX (336) 545-2500

2002 PISGAH CHURCH ROAD • SUITE 300 • GREENSBORO, NC 27455

December 3, 1998

Dear Vanguard Employee:

The FCC has recently promulgated several rulings requiring wireless carriers to provide a means for people with speech, language, or hearing disabilities to use TTY devices to make 9-1-1 calls using wireless phones. Specifically, the FCC has ordered wireless carriers such as Vanguard to develop a system through which users can make 9-1-1 calls over Vanguard's digital network using TTY devices.

Although Vanguard has worked diligently with industry representatives and consumer groups, technology has not yet developed to the point where a TTY user can make a 9-1-1 call with a digital phone. Vanguard will continue to work with the FCC and with other interested parties to offer a TTY-compatible digital system. In the interim, it is important that our customers receive correct information about using TTY devices with wireless phones.

Please keep the following points in mind if a subscriber or potential customer asks about using TTY devices with wireless phones:

- A TTY (also known as a TDD or Text Telephone) is a telecommunications device that allows people who have speech, language, or hearing disabilities to communicate by telephone. TTY devices include a keyboard that enables people to type their part of a conversation, which is then transmitted in the form of tones through the telecommunications network. The tones are then translated back to text, which appears on the recipient's TTY screen.
- TTY devices are currently incompatible with digital wireless phones. CellularOne is working with the wireless industry, with equipment manufacturers, and with representatives of the hearing and speech impaired community to ensure that digital phones will be compatible with TTY devices. CellularOne will keep its customers fully apprised of the status of these developments.
- Certain TTY devices may currently be used with certain analog phones to place wireless calls. If you are a TTY user and are unsure of whether your telephone is TTY compatible, please contact customer service at 1-800-661-0611 or dial "611" from your CellularOne phone. If you currently have a digital or dual mode phone, we will replace it with an analog phone at no charge to you. We can also assist you in finding other equipment necessary to enable you to use your TTY device with your new analog phone.

- Customers interested in learning more about TTY devices and their compatibility with analog and digital wireless phones should contact customer service at 1-800-661-0611 or dial "611" from their CellularOne phone.

By communicating these important messages, we can keep our current and potential future customers fully informed of the capabilities of our wireless services as they relate to TTY devices.

Please contact my office should you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Richard C. Rowlenson".

Richard C. Rowlenson
Executive Vice President and General Counsel

You

make the choice

If you are a person with a hearing disability, you can make choices that will allow you to access wireless phones and give you options for virtually anytime, anywhere communication.

Unlike traditional wireline phones, with wireless phones, you decide which phone works best for you. You choose the phone, the service provider and any additional features, functions or external devices to create your personal wireless communication tool.

Our

Commitment

The wireless industry is committed to making wireless phones and technology available to all people, including people who are hard of hearing or deaf, persons with hearing disabilities and persons who wear hearing aids. Wireless service providers and manufacturers are continuing research to find solutions and ensure that quality wireless communications are available for all people.

By promoting education about wireless technology and providing consumers with a variety of solutions, the industry will maximize persons' communication opportunities and choices and create an avenue for education and dialogue between consumers, service providers and equipment manufacturers.

For more information:



CTIA

Building The Wireless Future.
Cellular Telecommunications Industry Association
1770 Connecticut Avenue, NW Suite 200 Washington, DC 20036
phone 202-765-6081 www.wireless.com/consumer

Access

**Access to Wireless Phones for
Persons who are hard-of-hearing
and TTY users**



CTIA

Building The Wireless Future.
Cellular Telecommunications Industry Association

www.wow-com.com/consumer

*Your
solution
will be*

Unique

Because of the diversity of hearing disabilities, hearing aids, and types of telephones, there is no single solution to choosing a wireless phone. Being an informed consumer will ensure that you find the right solution available to you.

Explore the different wireless products, services and access solutions offered in your area and determine which combination best meets your personal needs.

Here are two basic types of wireless phones — analog and digital. Under most circumstances, analog phones do not interfere with hearing aids. Some digital phones may interfere and cause a buzz when held close to some hearing aids. You should try using the different digital phones to see if you experience any objectionable interference.

*No two
solutions
are alike*

Again, the choice is yours. There are numerous styles and brands of phones available. Remember to try the different technologies before purchasing your equipment. The choices you make will enhance the quality of your life and give you limitless opportunities for virtually anytime, anywhere communication.

☎ If you use a hearing aid with a telecoil, you can choose from a number of wireless phones with built-in t-coil coupling capability. A list of wireless phones with built-in t-coil capability is available on CTHA's Website at <http://www.wow-com.com/consumer>. Once there, click on the access wireless icon.

☎ If your hearing aid has a t-coil, you should not assume that a wireless phone with built-in T-coil capability is the only solution for you. You may discover that using a phone with increased volume control or a combination of

any of the solutions discussed below may give you optimal use of your wireless phone.

☎ If you use a TTY, some analog phones may be compatible with your TTY. If your TTY has direct connect capabilities, an RJ-11 intelligent interface is available that may allow you to connect your wireless phone directly to your TTY.

☎ External devices that may enhance your ability to use a wireless phone are also available. One type of device acts as an external t-coil coupling device and directs the telephone signal into the hearing aid's t-coil. Another device, similar to a Walkman earplug, requires you to place the speaker into your ear in place of a hearing aid and provides for better reception in noisy environments. Also available are portable amplification devices which fit over the earpiece of many phones and increase the volume beyond the phone's volume control capabilities.

☎ If you have difficulty hearing your phone ring, there are phones with built-in vibrating alerts, vibrating batteries that can be added to some phones, and wireless units programmed to vibrate when your wireless phone rings.

☎ If you require volume control, you can make the choice among many wireless phones which offer a volume control option.

DECLARATION OF RICHARD C. ROWLENSON

I. Richard C. Rowlenson, hereby declares as follows:

1. I am the Executive Vice President of Vanguard Cellular Systems, Inc. I have personal knowledge of Vanguard's TTY/digital wireless compatibility plans.

2. I have reviewed the attached *Timetable for Implementing Section 20.18(c)* and the facts set forth therein. The information set forth in the Timetable is true and accurate to the best of my knowledge, information, and belief.

A handwritten signature in cursive script that reads "Richard C. Rowlenson". The signature is written in dark ink and is positioned above a horizontal line.

Richard C. Rowlenson
Executive Vice President
Vanguard Cellular Systems, Inc.

December 3, 1998

Vanguard's Timetable for Implementing Section 20.18(c)¹

<u>Date</u>	<u>Milestone</u>
PHASE I -- FIRM DEADLINES	
10/98 - 11/98	Notify customers of TTY limitations through monthly billing inserts.
11/15/98 - 12/31/98	Design and implement expanded notification plan, including billing insert, Website posting, CTIA Brochure dissemination, digital handset stickers, and letter to all employees.
11/20/98 and ongoing	Initiate regular status update meetings with phone manufacturers, TTY device manufacturers and Nortel; schedule on-going monthly meetings.
By 12/31/98	Create and activate TTY Project team, including representatives from Engineering, Customer Operations, Customer Service, Customer Activations, Information Services, Sales, Training, Distribution, Billing, Financial Services, and Legal departments.
1/1/99 - 1/31/99	Evaluate product proposals (or status reports) from telephone manufacturers, including IWF, V.18, and proprietary solutions, and conduct technical review to determine preferred long-term solution.
By 1/15/99	Meet with Richard Uzuanis, Vice President of HITEC (a distributor of products for the hearing impaired), to discuss call center operation and product availability.
By 1/31/99	Review Standardized Test Plan and update to conform with Vanguard specifications.
By 3/1/99 and ongoing	Report to FCC as to progress being made toward implementation of TTY/ digital wireless capability. Continue reports quarterly or upon any significant deviation from Timetable or other significant development.
PHASE II -- PROJECTED FROM DATE OF PRODUCT AVAILABILITY	
30 days	Field test product prototype to ensure compliance with FCC Order and with applicable consumer concerns.
45 days	Determine network performance benchmark (i.e., switch compatibility) using solution equipment.
60 days	Review test results and initiate commercial product/package development.
90 days	Begin Sales and Support product training.
120 days	Procure commercially ready product, perform final testing, and distribute product to all retail locations.
120 Days from date of product availability	MAXIMUM TIME TO IMPLEMENT COMMERCIAL PRODUCT

¹ Implementation of the Timetable is contingent upon the approval and consummation of Vanguard's pending transfer of control application. See Vanguard Cellular Systems, Inc. and Winston, Inc. Seek Consent for Transfer of Control, Public Notice DA 98-2320 (rel. Nov. 13, 1998).